SASI ENGINEER-SAFE VALIDATION PACKAGE v1.2

Supplemental Hardening Addendum II: Structural, EMI, and Statistical Controls

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Scope: Adds additional structural, electromagnetic, and procedural hardening controls to SASI v1.0 and v1.1. No mechanism claims.

B1. Base Mass to Assembly Mass Ratio

Risk controlled: floor-coupled vibration and non-linear load-cell response.

The base mass supporting the scale and isolation plate shall be at least five times the mass of the isolation plate and exciter assembly. This ratio reduces vibration transmission and helps ensure operation within the linear elastic region of the load cell.

B2. Electromagnetic Interference (EMI) Control

Risk controlled: electromagnetic coupling from amplifiers or signal generators into scale electronics.

Amplifiers and signal-generation electronics should be physically separated from the measurement stack and enclosed in a grounded conductive enclosure (Faraday cage). Power and signal cables entering the measurement area should be routed carefully to minimize EMI pickup.

B3. Phase-Matched Vibration Control

Risk controlled: unequal vibration energy between Pattern and Detuned modes.

During Detuned Mode (90-degree phase alignment), vibration RMS should be matched as closely as practicable to Pattern Mode (120-degree phase alignment). The achieved RMS values and matching tolerance should be reported numerically in all datasets.

B4. Randomized and Blinded Trial Ordering

Risk controlled: observer bias during data collection and analysis.

Baseline, Pattern, and Detuned runs should be executed in randomized order. Where feasible, run labels should be blinded until after data analysis to reduce unconscious bias. The randomization method should be documented.

B5. Claims Boundary (Unchanged)

This addendum asserts no physical mechanism and makes no claims regarding gravity modification, energy extraction, over-unity behavior, or new physics. It defines only additional artifact controls.